

As Amended
said polishing agent passages are formed by grooves formed in said flat plate portion and

the surface of said flat plate portion forms said step portions.

A copy of the marked up original claims is attached to this response showing the changes as set forth in amended 37 C.F.R. § 1.121.

REMARKS

Claims 1-6 are pending in the application. By this amendment, claims 2 and 5 are amended. Claims 3 and 6 have been withdrawn from consideration.

Applicants express their appreciation for the Examiner's indication of allowable subject matter in claims 2 and 5.

The Office Action states that Fig. 6-8 should be designated by a legend such as "Prior Art". A Request for Approval of Drawing Corrections proposing red-line corrections to these figures is filed herewith. The proposed red-line corrections designate a legend for these figures.

The Office Action rejects claim 1 under 35 U.S.C. § 102(e) as anticipated by Amsden et al. (U.S. Patent No. 5,778,481). The rejection is respectfully traversed.

Amsden teaches a silicon wafer cleaning and polishing pad that includes a plurality of resilient members arranged in a particular pattern. The particular pattern facilitates movement of fluids from a center region of the pad to the periphery of the pad. Each of the resilient members include raised ridged surfaces that includes a contoured edge portion 18. The edge portion 18 may be slanted, curved, rounded or formed in any shape such that the raised ridged surface 14 more evenly contacts the wafer surface during rotation of the pad. (See col. 4, lines 13-18 of Amsden).

Claim 1 is directed to a polishing cloth for chemically mechanically polishing a workpiece. The polishing cloth includes polishing projections and polishing agent passages. Claim 1 recites that at least one-stage step portions are formed between polishing faces of the polishing projections and bottoms of the polishing agent passages.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 1. Specifically, the applied art fails to teach at least one-stage step portions as recited in claim 1. Thus, because the applied art fails to teach the at least one stage step portions, claim 1 is allowable over the applied art.

Withdrawal of the rejection is respectfully requested.

The Office Action rejects claim 4 under 35 U.S.C. § 103(a) as unpatentable over Nagahara et al. (U.S. Patent No. 5,816,900) in view of Amsden. The rejection is respectfully traversed.

Nagahara teaches an apparatus for polishing a substrate at radially varying polishing rates. Nagahara teaches a polishing apparatus that includes a polishing cloth 16 for mechanically polishing a workpiece 12, a polishing head 26, and tubes 66 for delivering a chemical polish to the chemical mechanical polishing cloth 16. However, Nagahara does not disclose one-stage step portions formed between the polishing surfaces of the polishing projections and bottoms of the polishing agent passages as recited in claim 4.

As discussed above, Amsden fails to cure the deficiencies of Nagahara. Thus, one of ordinary skill in the art would not be motivated to combine the features of the applied art because combining such features would not result in the claimed invention. Thus, claim 4 is allowable over the applied art.

Withdrawal of the rejection is respectfully requested.

Claims 3 and 6 depend from claims 1 and 4 respectfully. It is respectfully requested that these dependent claims be rejoined with the application because these dependent claims depend from allowable independent claims. Rejoinder of claims 3 and 6 to the application is respectfully requested.

As indicated in the Office Action, claims 2 and 5 would be allowable if rewritten in independent forms including all of the limitations of the base claim and any intervening claims. Claims 2 and 5 have been amended in independent form that includes all of the features of the base claim and any intervening claims. Claims 2 and 5 are therefore allowable.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully solicited. Should the Examiner believe anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

In the event this paper is not considered to be timely filed, Applicants respectfully petition for an appropriate extension of time. The Commissioner is authorized to charge

payment for any additional fees which may be required with respect to this paper to
Counsel's Deposit Account 01-2300.

Respectfully submitted,

Arent Fox Kintner Plotkin & Kahn



Carl Schaurowitch
Attorney for applicant(s)
Reg. No. 29,211

1050 Connecticut Ave. NW
Suite 600
Washington, D.C. 20036-5339
Tel: (202) 857-8925
Fax: (202) 638-4810

CS:ksm

Enclosures: Marked-Up Copy of Amended Claims
Request for Approval of Drawing Corrections
Petition for Extension of Time (one month)

MARKED-UP COPY OF AMENDED CLAIMS

2. (Once Amended) A chemical mechanical polishing cloth [according to Claim 1] for chemically mechanically polishing a workpiece, said chemical mechanical polishing cloth comprising, on an opposite-to-workpiece face thereof:

polishing projections having polishing faces arranged to come in contact with a workpiece for polishing the same;

polishing agent passages, having bottoms, for introducing a polishing agent; and at least one-stage step portions formed between said polishing faces of said polishing projections and the bottoms of said polishing agent passages, wherein:

said polishing cloth has a flat plate portion;

said polishing projections are formed as projecting from said flat plate portion;

said polishing agent passages are formed by grooves formed in said flat plate portion; and

the surface of said flat plate portion forms said step portions.

5. (Once Amended) A chemical mechanical polishing apparatus [according to claim 4] comprising:

a chemical mechanical polishing cloth for chemically mechanically polishing a workpiece;

a polishing head for holding and rubbing a workpiece with said chemical mechanical polishing cloth; and

a polishing agent supply mechanism for supplying a polishing agent to said chemical mechanical polishing cloth,

said mechanical polishing cloth including, on an opposite-to-workpiece face thereof:

polishing projections having polishing faces arranged to come in contact with a workpiece for polishing same;

polishing agent passages, having bottoms, for introducing a polishing agent; and at least one-stage step portions formed between said polishing faces of said polishing projections and the bottoms of said polishing agent passages, wherein

said polishing cloth has a flat plate portion;
said polishing projections are formed as projecting from said flat plate portion;
said polishing agent passages are formed by grooves formed in said flat plate portion and

the surface of said flat plate portion forms said step portions.

Lee'd approval
DVN
5-30-2001

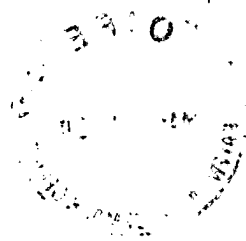
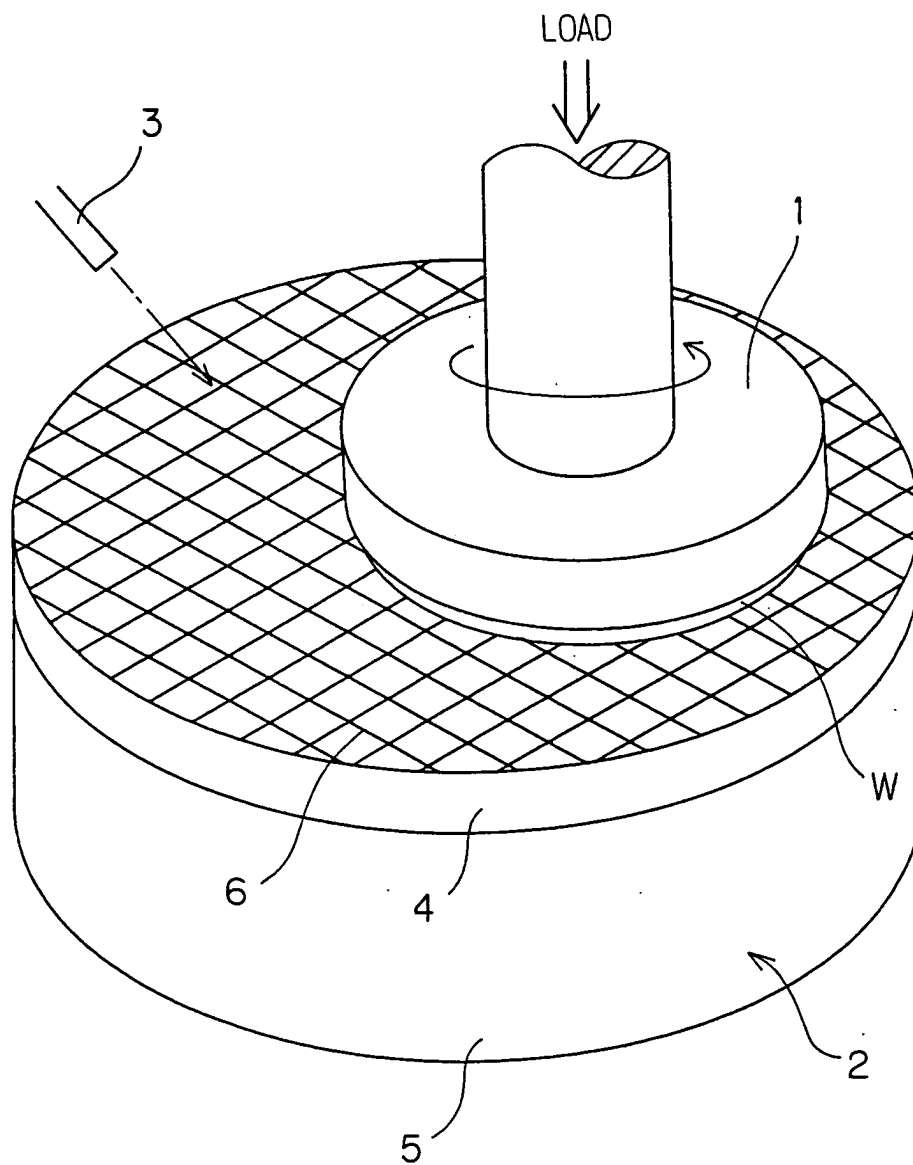


FIG. 6 PRIOR ART



Rec'd approval
DUN
5-30-2001

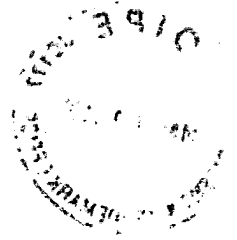
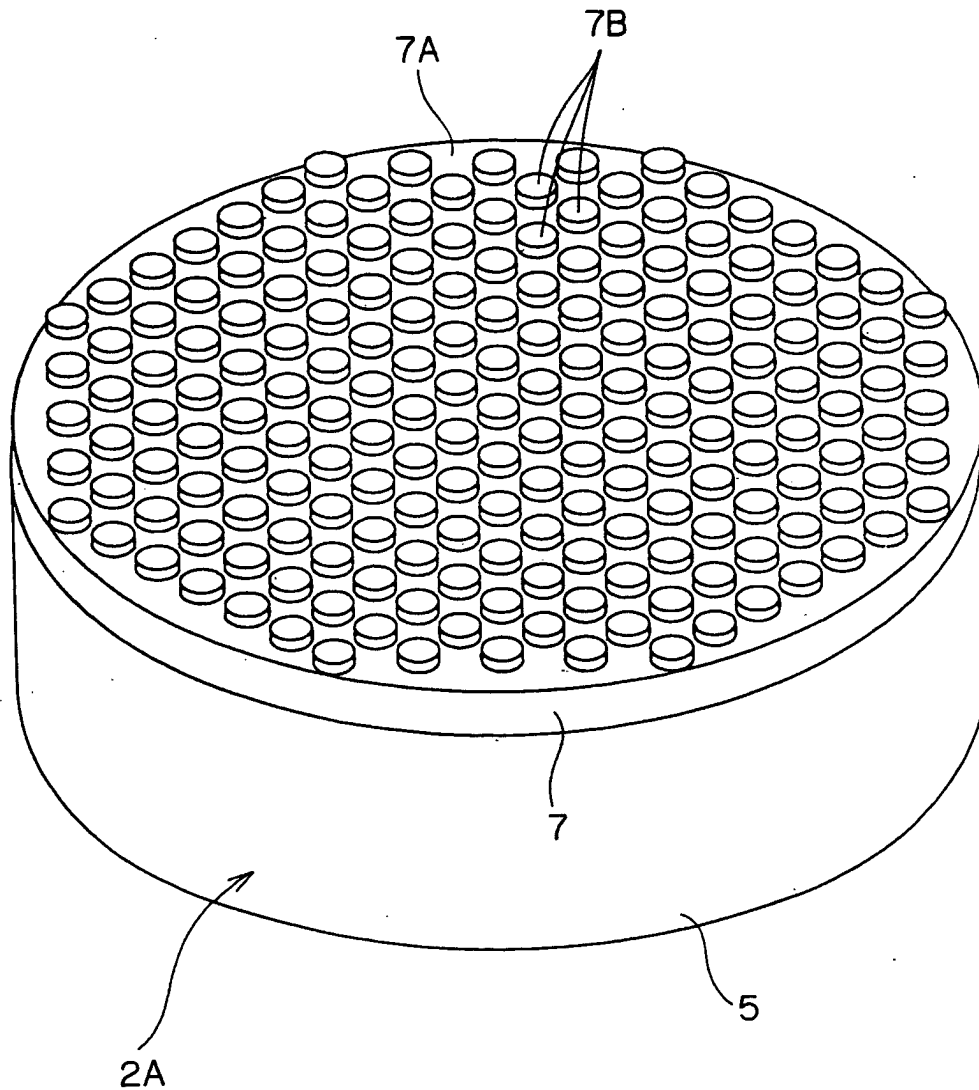


FIG. 7 PRIOR ART



Rec'd approval
SVN
5-30-2001

FIG. 8 PRIOR ART

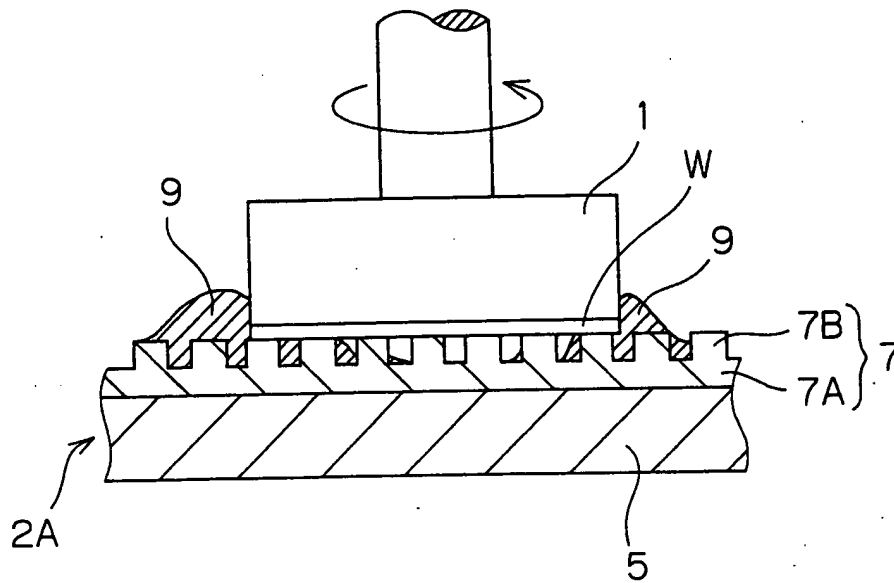


FIG. 9

